

What is claimed is

1. A method of measuring traffic at a node under test in a network, comprising:
  - a) sending a plurality of first type datagrams from a source node, each first type datagram having a path through the network including the node under test, each first type datagram causing the node under test to generate a second type datagram, and each second type datagram having a path through the network that includes the source node;
  - b) processing at least two of the second type datagrams to determine a number of datagrams processed by the node under test between said at least two datagrams;
  - c) determining the time between the at least two datagrams; and
  - d) computing a traffic value reflecting the ratio between the determined number of messages and the determined time.
2. The method of measuring traffic of claim 1 wherein causing the node under test to generate a second type datagram includes setting a time to live field in the first type datagram that causes the datagram to expire upon reaching the node under test.
3. The method of claim 2 wherein the second type datagram is part of a message indicating that a datagram expired.
4. The method of claim 1 wherein the source node is a consumer computer.
5. The method of claim 1 wherein the source node is a diagnostic unit connected to a call center.
6. The method of claim 5 wherein the diagnostic unit is in a different administrative domain than the node under test.
7. The method of claim 5 wherein the first type datagrams have a destination address representing a server for which a customer experienced problems accessing.
8. The method of claim 1 used in a method of responding to a customer complaint about slow access to the Internet, additionally comprising:
  - a) receiving from the customer a URL;

- 4           b)     selecting the node under test based on the designated URL;
  - 5           c)     reporting to the customer based on the results of the measured traffic.
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- 1   9.     The method of claim 1 additionally comprising:
    - 2           a)     selecting a path through the network having a plurality of nodes;
    - 3           b)     measuring the traffic at the plurality of nodes according to the method of
    - 4           claim 1.
  - 1   10.    The method of claim 1 wherein the first type datagram is in IP protocol.
  - 1   11.    The method of claim 1 wherein the second type datagrams are in IP protocol and  
2           processing the second type datagrams includes computing the change in the value  
3           of the identification fields in the datagrams.
  - 1   12.    The method of claim 1 wherein the second type datagram is part of a time out  
2           message.
  - 1   13.    The method of claim 1 wherein the value reflecting the computed traffic value is  
2           an average of values obtained from processing multiple pairs of second type  
3           datagrams.
  - 1   14.    A method of measuring traffic at a node under test in a network, comprising:
    - 2           a)     sending a pair of first type datagrams from a source node separated by a  
3                   time interval, each of the first type datagrams having a path through the  
4                   network including the node under test; each of the first type datagrams  
5                   having a time to live field causing the datagram to expire at the node under  
6                   test, thereby causing the node under test to generate a timeout message in  
7                   response to each first type datagram;
    - 8           b)     processing the timeout messages to determine a number of datagrams  
9                   processed by the node under test between the timeout messages;
    - 10          c)     computing a traffic value reflecting the number of datagrams processed by  
11               the node under test in the time interval.
  - 1   15.    The method of claim 14 wherein the first type datagrams are in IP protocol.

- 1 16. The method of claim 14 wherein the source node is a diagnostic unit associated  
2 with a call center.
- 1 17. A method of measuring traffic at nodes on a path through a network, comprising,  
2 for each node in the path:  
3 a) sending a pair of first type datagrams from a source node separated by a  
4 time interval, each of the first type datagrams having a path through the  
5 network including the node under test; each of the first type datagrams  
6 having a time to live field causing the datagram to expire at the node under  
7 test, thereby causing the node under test to generate a timeout message in  
8 response to each first type datagram;  
9 b) processing the timeout messages to determine a number of datagrams  
10 processed by the node under test between the timeout messages;  
11 c) graphically displaying the results of the processing in a graph showing  
12 traffic on a node by node basis.
- 1 18. The method of claim 17 additionally comprising selecting the path through the  
2 network in response to a consumer complaint about accessing a node in the  
3 network.
- 1 19. The method of claim 17 wherein processing the timeout messages includes  
2 computing the difference in the value of the ID fields in the messages.
- 1 20. The method of claim 19 wherein processing the timeout messages determining the  
2 ratio between the difference in the values of the ID fields and the difference in  
3 times at which the messages in the pair of first type datagrams are sent.